

3600.100

AUG 18 1999

FILE COPY

Receipt

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue Application of ) Examiner: Not Yet Assigned  
:   
DAVID A. SPEAR ET AL. ) Group Art Unit: 3745  
:   
Appln. No.: 09/343,736 )  
:   
Filed: June 30, 1999 )  
:   
For: SWEPT TURBOMACHINERY )  
BLADE : Date: August 16, 1999

Assistant Commissioner for Patents  
Washington, D.C. 20231

Attention: Customer Corrections

TECHNOLOGY CENTER 3700

OCT 25 1999

RECEIVED

REQUEST FOR CORRECTED FILING RECEIPT

Sir:

The Filing Receipt for the above-identified application requires correction in that the first-named inventor, DAVID A. SPEAR, has been omitted from the inventors listed on the filing receipt.

David A. Spear is deceased. Copies are enclosed of the Reissue Declaration, signed by Dennis N. Kantor, executor of the estate of David A. Spear, and of a Fiduciary's Probate Certificate from the State of Connecticut Court of Probate, establishing that Dennis N. Kantor has authority to act on behalf of David A. Spear. These documents bear a certificate of

09/343,736 . 063099

Express Mail showing that they were filed with the application papers in the present application.

It is respectfully requested that the Patent and Trademark Office mail a corrected Filing Receipt listing all three inventors, namely DAVID A. SPEAR, BRUCE P. BIEDERMAN and JOHN A. OROSA.

Any fee associated with this paper may be charged to Deposit Account No. 50-0409.

The applicants' undersigned attorney may be reached by telephone at (609) 921-8660. All correspondence should be directed to the below listed address.

Respectfully submitted,



Attorney for Applicants

Registration No. 26,641

DAVID M. QUINLAN, P.C.  
40 Nassau Street  
Princeton, NJ 08542  
Facsimile: (609) 921-8651

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/343,736 REISSUE	06/30/99	416	3745	3600.100

DAVID A. SPEAR, EAST HARTFORD, CT, DECEASED; BY DENNIS N. KANTOR,  
EAST HARTFORD, CT, LEGAL REPRESENTATIVE; BRUCE P. BIEDERMAN,  
WEST HARTFORD, CT; JOHN A. OROSA, PALM BEACH GARDENS, FL.

\*\*CONTINUING DOMESTIC DATA\*\*\*\*\*

VERIFIED

THIS APPLN IS A RE OF 08/559,965 11/17/95 PAT 5,642,985  
and a con of 09/874931 06/05/01

\*\*371 (NAT'L STAGE) DATA\*\*\*\*\*

VERIFIED

\*\*FOREIGN APPLICATIONS\*\*\*\*\*

VERIFIED

IF REQUIRED, FOREIGN FILING LICENSE GRANTED 07/23/99

Foreign Priority claimed 35 USC 119 (a-d) conditions met	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> Met after Allowance	STATE OR COUNTRY CT	SHEETS DRAWINGS 7	TOTAL CLAIMS 21
Verified and Acknowledged			Examiner's initials		

DAVID M QUINLAN P C  
40 NASSAU STREET  
PRINCETON NJ 08542

SWEPT TURBOMACHINERY BLADE

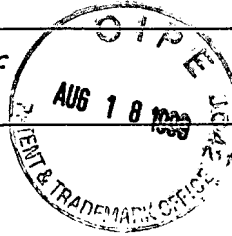
FILING FEE  
RECEIVED

\$1,684

FEES: Authority has been given in Paper  
No. \_\_\_\_\_ to charge/credit DEPOSIT ACCOUNT  
NO. \_\_\_\_\_ for the following:

<input type="checkbox"/>	All Fees
<input type="checkbox"/>	1.15 Fees (Filing)
<input type="checkbox"/>	1.17 Fees (Proc.)
<input type="checkbox"/>	1.18 Fees (Issue)
<input type="checkbox"/>	Other _____
<input type="checkbox"/>	Credit

Court of Probate, District of Manchester  
District Number 077



95-0620

Estate of: Spear, David A.  
aka David Alan Spear

Date of Certificate: 06/24/1999

**Fiduciary's name and address:**

Dennis N. Kantor, Box 280748, 330 Roberts Street, East Hartford, CT  
06128-0748  
Position of trust: Executor  
Date of appointment: 11/28/1995

The undersigned hereby certifies that the fiduciary of the above estate has accepted appointment; executed probate bond according to law or has been excused by will or by statute; and is legally authorized and qualified to act as such fiduciary on said estate; said appointment being unrevoked and in full force as of the above date of certificate.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of this court on the above date of certificate.

COURT SEAL

*Mary C. McNamara*  
Mary C. McNamara Judge/Ass't. Clerk

NOT VALID WITHOUT COURT OF PROBATE SEAL IMPRESSED

As used in this document, the word fiduciary includes the plural, where the context so requires.

"Express Mail" mailing label number  
EL 328767816 US

Date of Deposit June 30, 1999

I hereby certify that this paper or its  
is being deposited with the United States  
Postal Service "Express Mail Post Office  
to Addressee." service under 37 CFR 1.10  
on the date indicated above and is addressed  
to the Commissioner of Patents and Trade-  
marks Washington DC 20231

*Karen Malatesta*  
KAREN MALATESTA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue Application of

DAVID A. SPEAR ET AL.

Appln. No.: Not yet assigned

Filed: Herewith

For: SWEPT TURBOMACHINERY  
BLADE



Attorney Docket No.: 3600.100

Examiner: Mark Sgantzios

Group Art Unit: 3401

Application to reissue  
U.S. Patent No. 5,642,985

TECHNOLOGY CENTER 3700

OCT 25 1999

RECEIVED

Assistant Commissioner for Patents  
Box Patent Application  
Washington, D.C. 20231

"Express Mail" mailing label number

EL 328767216 US

Date of Deposit June 30, 1999

I hereby certify that this paper or fee  
is being deposited with the United States  
Postal Service "Express Mail Post Office  
to Addressee." service under 37 CFR 1.10  
on the date indicated above and is addressed

to the Commissioner of Patents and Trade-  
marks Washington DC 20231

Karen Malatesta  
KAREN MALATESTA

Sir:

We, DAVID A. SPEAR, who was a United States citizen residing at  
Manchester, Connecticut, at the time of his death on October 22, 1995, BRUCE P.  
BIEDERMAN, a United States citizen residing at West Hartford, Connecticut, and  
JOHN A. OROSA, a United States citizen residing at Palm Beach Gardens, Florida,  
hereby declare and say that:

1. We believe that we are the original, first and joint inventors of the  
subject matter which is claimed in the subject reissue application and  
for which a reissue patent is sought on the invention entitled SWEPT  
TURBOMACHINERY BLADE, the specification of which is filed  
herewith.

2. We have reviewed and understand the contents of the reissue application, including the claims.

3. We acknowledge our duty to disclose to the U.S. Patent and Trademark Office all information known to be material to patentability as defined in 37 C.F.R. § 1.56.

4. We believe that the original above-identified U.S. Patent No. 5,642,985 is partly inoperative by reason of us having claimed less than we had the right to claim in that patent. Specifically, we believe that we were entitled to claims to at least the following subject matter:

A turbomachinery blade for a gas turbine engine fan comprising a plurality of blades mounted for rotation about a fan axis with neighboring blades forming passages for a working medium gas, wherein:

the blade has a configuration enabling the fan to rotate at speeds providing supersonic flow velocities in at least a portion of each passage causing the formation of a shock in the gas adjacent an inner wall of a case forming an outer boundary for the working medium gas flowing through the passages;

the blade has a leading edge with an intermediate region and a tip region outward of the intermediate region and extending to a tip end of the blade, the intermediate region being swept rearward at a sweep angle that does not decrease; and

the tip region is translated forward to provide a sweep angle that causes the blade to intercept the shock.

A blade for a gas turbine engine fan comprising a plurality of blades mounted for rotation within a case circumscribing the blades and forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

the blade has a configuration enabling the fan to rotate at speeds providing supersonic flow velocities in at least a portion of each passage;

the blade has a leading edge with an intermediate region and a tip region beginning at an outward boundary of the intermediate region and extending to a tip end of the blade, the intermediate region having a sweep angle that does not decrease from the beginning to the outward boundary of the intermediate region; and

throughout the tip region the sweep angle is less than the sweep angle at the outward boundary of the intermediate region.

A blade for a gas turbine engine fan comprising a plurality of blades mounted for rotation within a case circumscribing the blades and forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

the blade has a configuration enabling the fan to rotate at speeds providing supersonic flow velocities in at least a portion of each passage;

the blade has a leading edge with an intermediate region and a tip region beginning at an outward boundary of the intermediate region and extending to a tip end of the blade, the intermediate region being swept rearward at a sweep angle that does not decrease from the beginning to the outward boundary of the intermediate region; and

the tip region is translated forward from the outward boundary of the rearwardly swept intermediate region.

Turbomachinery for a gas turbine engine, comprising a plurality of blades mounted for rotation within a case circumscribing the blades and forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

each blade has a configuration enabling the turbomachinery to rotate at speeds providing supersonic working medium gas velocities at least in the vicinity of the passages proximate to the case;

each blade has a leading edge with a swept intermediate region and a swept tip region beginning at an outward boundary of the intermediate region and extending to a tip end of the blade, the intermediate region of each blade having a sweep angle that does not decrease from the beginning to the outward boundary of the intermediate region; and

throughout the tip region the sweep angle of each blade is less than the sweep angle at the outward boundary of the intermediate region.

A gas turbine engine fan comprising a plurality of identical blades, each blade being mounted for rotation within a case circumscribing the blades and having an inner wall forming an outer boundary for a working medium gas flowing through passages formed by neighboring blades, wherein:

each blade has a configuration enabling the fan to rotate at speeds providing supersonic working medium gas velocities in the vicinity of the passages proximate to the case;

each blade has a leading edge with an inner region, an intermediate region and a tip region, the inner region beginning at a root end of the blade and extending to an inward boundary of the intermediate region, and the tip region extending from an outward boundary of the intermediate region to a tip end of the blade; and

the inner region is swept forward, the intermediate region is swept rearward at a sweep angle that does not decrease, and the tip region is translated forward from the outward boundary of the intermediate region.

55023693736930  
A blade for a gas turbine engine rotatable within a case at speeds providing supersonic flow over at least a portion of the blade, wherein the blade leading edge has a rear swept middle region ending at a tip region that is translated forward from the end of the middle region.

A blade for a gas turbine engine rotatable within a case at speeds providing supersonic flow over at least a portion of the blade, wherein the blade leading edge has a forward swept middle region ending at a tip region that is translated rearward from the end of the middle region.

5. All errors being corrected in the subject reissue application up to the time of filing this declaration, including the error identified above, arose without deceptive intent on our parts.

6. We hereby appoint John Swiatocha, Registration No. 27,955, Kenneth C. Baran, Registration No. 32682, and David M. Quinlan, Registration No. 26,641, as our attorneys to transact all business in the Patent and Trademark Office.




7. All correspondence in the above-identified application should be sent to:

David M. Quinlan  
40 Nassau Street  
Princeton, NJ 08542  
Telephone: (609) 921-8660  
Facsimile: (609) 921-8651


Each of us hereby declares that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title XVIII of United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

097136.063099  
060290.9524E60

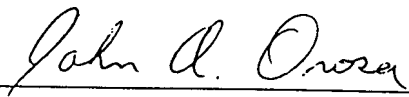
Date: 6/30/99

  
Dennis N. Kantor  
330 Roberts Street  
East Hartford, CT 06108  
Executor of the Estate of  
David A. Spear, deceased  
formerly residing at:  
28 Bishop Drive  
Manchester, CT 06040

Date: 6/28/99

  
Bruce P. Biederman  
20 High Street  
West Hartford, CT 06119

Date: 6-25-99

  
John A. Orosa  
11730 Cottonwood Circle  
Palm Beach Gardens, FL 33410